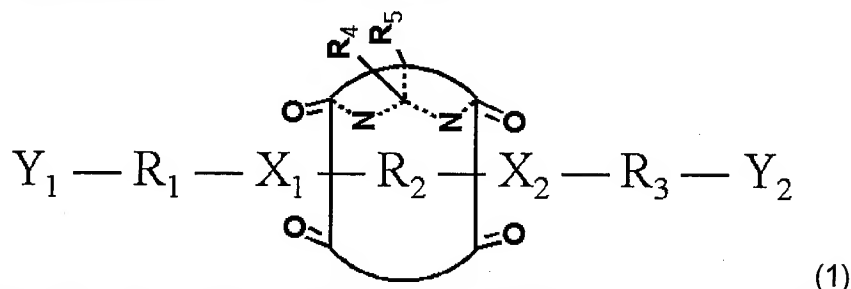


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

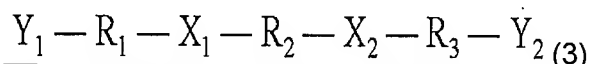
What is claimed is:

1. (Currently Amended) A solid substrate for a biochip comprising a compound represented by Formula 1 below:



wherein R_1 , R_2 , and R_3 are each independently saturated or unsaturated linear C_2 - C_{10} alkylene, ethyleneglycol oligomer, 1,4-substituted benzene, or 1,4-substituted pyridine; R_4 and R_5 are each independently hydrogen, an alkenyloxy group with an unsaturated bond end and a substituted or unsubstituted alkyl moiety of C_1 - C_{20} , a carboxyalkylsulfinyloxy group with a substituted or unsubstituted alkyl moiety of C_1 - C_{20} , a carboxyalkyloxy group with a substituted or unsubstituted alkyl moiety of C_2 - C_8 , an aminoalkyloxy group with a substituted or unsubstituted alkyl moiety of C_2 - C_8 , or a hydroxyalkyloxy group with a substituted or unsubstituted alkyl moiety of C_2 - C_8 ; X_1 and X_2 are each independently a positively charged functional group for ion-dipole interaction with an oxygen atom of cucurbituril or its derivative of represented by Formula 2; Y_1 is a functional group for a linkage with a biomaterial comprising a gene or a protein; and Y_2 is a functional group capable of binding to the solid substrate, wherein the compound of Formula 1 bonded to the solid substrate provides a linkage layer with a predetermined spacing in the biochip by being bonded to the solid substrate; and

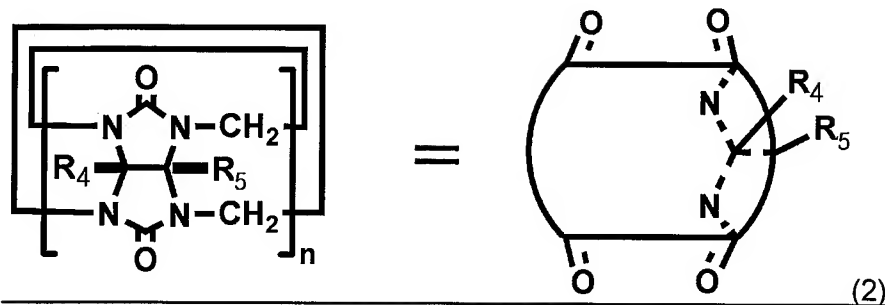
wherein a compound of Formula 3



(wherein R_1 , R_2 , R_3 , X_1 , X_2 , Y_1 , and Y_2 are as defined in Formula 1 above)

vertically passes through a cavity of cucurbituril or its derivative represented

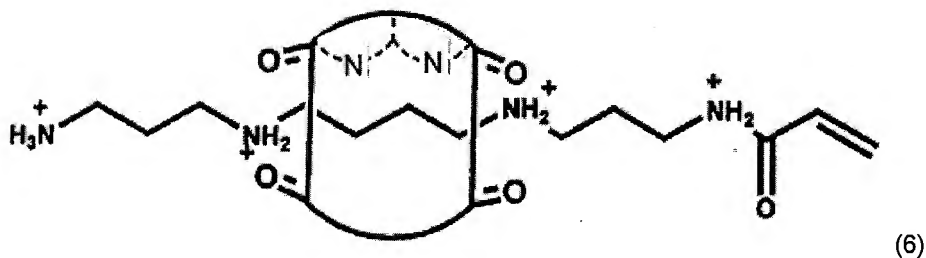
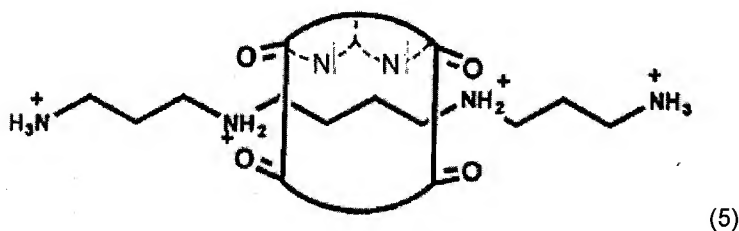
by Formula 2

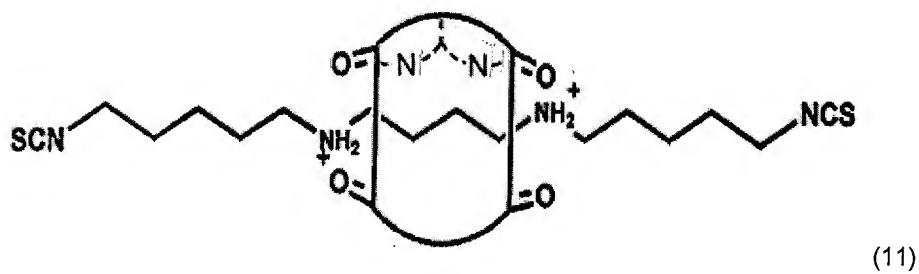
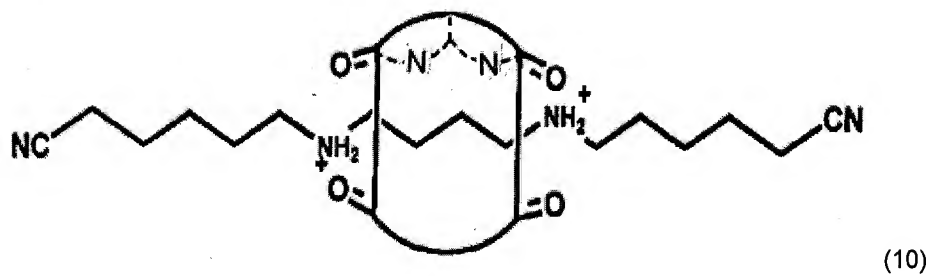
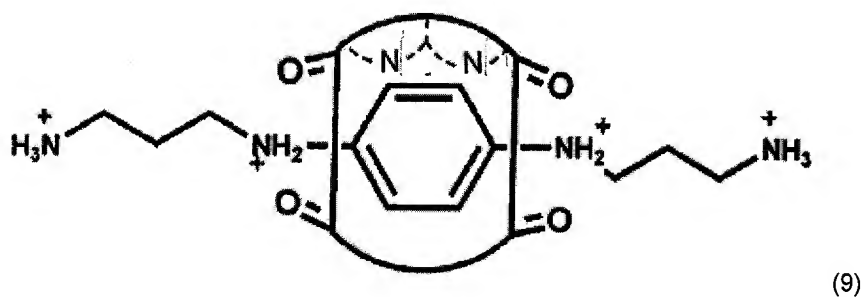
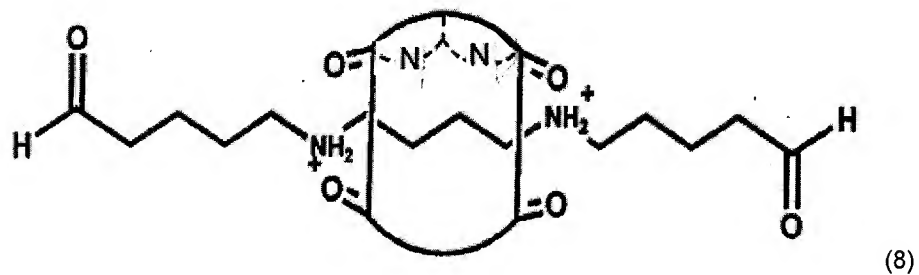
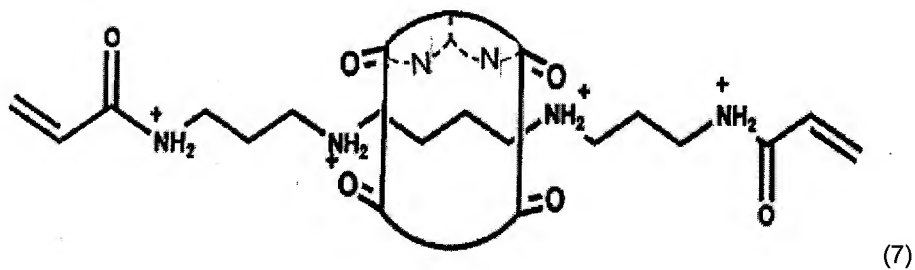


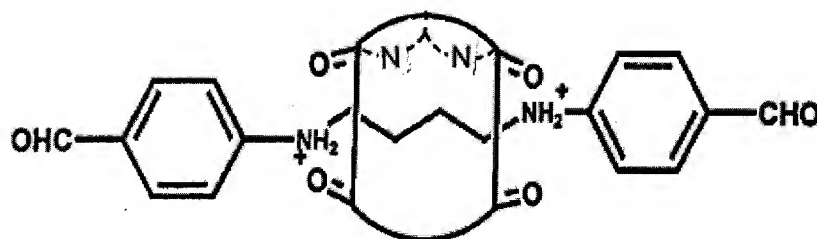
(wherein n is an integer of 4 to 20; and R₄ and R₅ are as defined in Formula 1 above).

2. (Previously Presented) The solid substrate of claim 1, wherein X₁ and X₂ are each independently secondary ammonium, 1,4-substituted pyridinium, or benzyl ammonium; and Y₁ and Y₂ are each independently a primary amine group, an amide group, an acrylamine group, an alkylester group, an aldehyde group, a carboxyl group, an alkoxyisilane group, a halogenated acyl group, a hydroxyl group, a thiol group, a halogen group, a cyan group, an isocyan group, or an isothiocyan group.

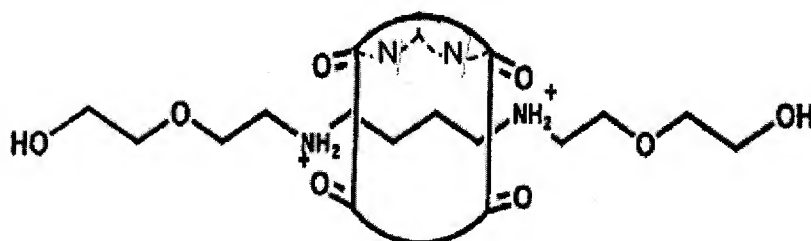
3. (Currently Amended) The solid substrate of claim 1, ~~which~~ wherein the compound of Formula 1 is selected from the group consisting of compounds represented by Formulae 5 through 13:







(12)



(13)

4. (Cancelled)

5. (Previously Presented) The solid substrate of claim 1, wherein the compound of Formula 1 is present in a density of 0.05 to 0.6 compounds/nm².

6. (Previously Presented) The solid substrate of claim 1, which is a glass, a silicon wafer, an indium tin oxide (ITO) glass, an aluminum oxide substrate, or a titanium dioxide substrate.

7. (Currently Amended) A gene chip comprising the solid substrate of claim 1 and a DNA capable of selectively interacting with a DNA to be assayed.

8. (Currently Amended) A protein chip comprising the solid substrate of claim 1 and a protein capable of selectively interacting with a protein to be assayed.

9. (Currently Amended) A sensor for biomaterial assay comprising the solid substrate of claim 1, wherein the biomaterial is a DNA or protein.

10. (Previously Presented) The solid substrate of claim 1, wherein the biochip is selected from the group consisting of a gene chip, a protein chip and a sensor for biomaterial assay.

11. (Previously Presented) The solid substrate of claim 1, wherein the compound of Formula 1 is bonded to the solid substrate via a covalent bond or a non-covalent bond.

12. (Cancelled)